
Executive Summary

Metropolitan Transportation Plan

Long Range Transportation Plan for the Metro-Hartford Capitol Region





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Executive Summary

As the designated Metropolitan Planning Organization (MPO) for the Greater Hartford Metro area, the Capitol Region Council of Governments (CROCOG) has prepared an update of its Metropolitan Transportation Plan (MTP). This document is one of three interrelated planning efforts that CROCOG has developed to help prepare for the region's future. The other planning documents are the region's Plan of Conservation and Development (POCD) and the Comprehensive Economic Development Strategy (CEDS). Taken together, these plans outline a future that focuses on CROCOG's communities, its people and its businesses, and a transportation system that will meet the CROCOG's overall objective of creating a more vibrant, green, connected, and competitive region. The effective date of this plan is April 3, 2019.

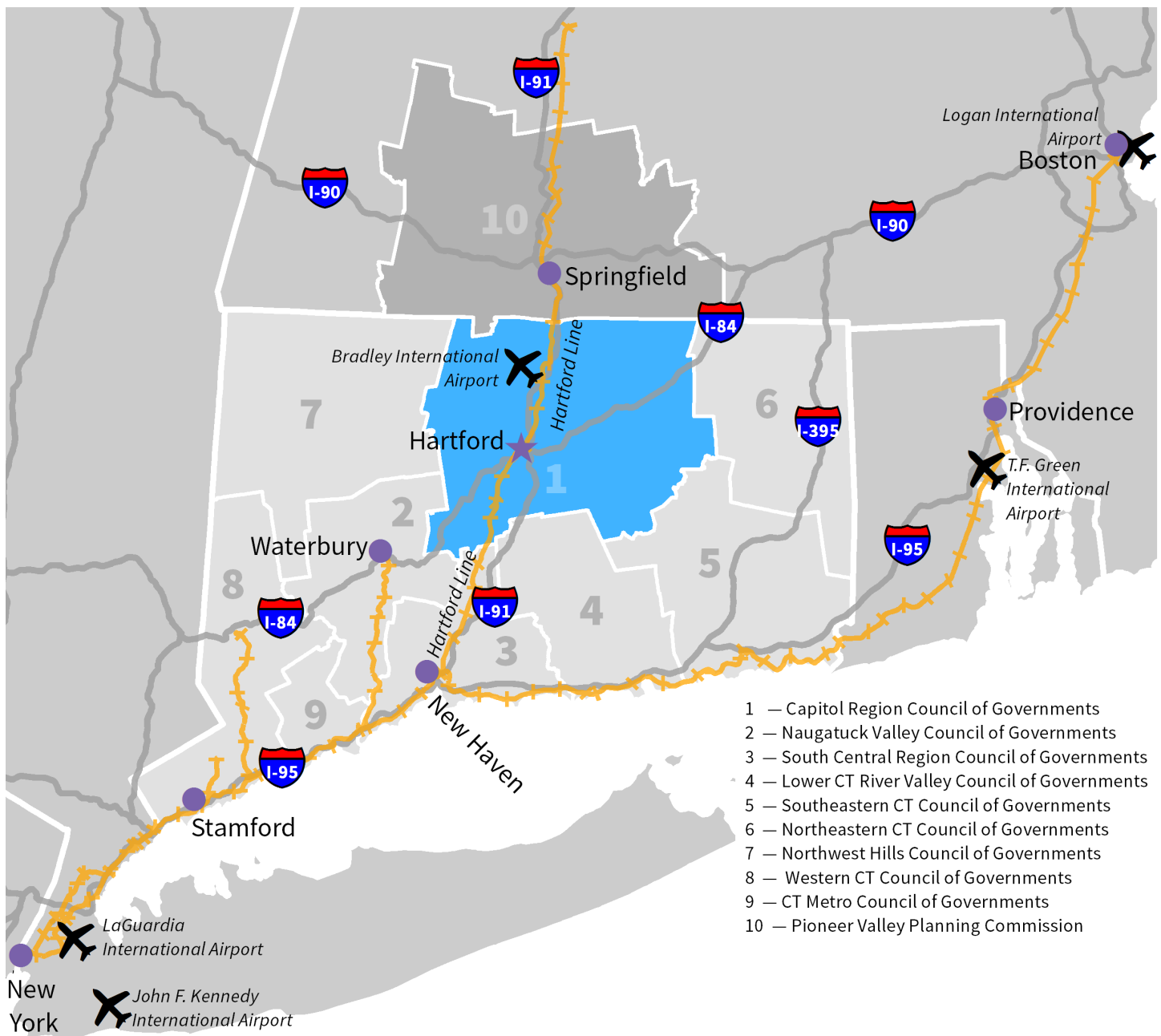


Photo by Carl Talley

A key component of the MTP planning process is a robust and inclusive public involvement process throughout preparation of the plan. CRCOG has conducted stakeholder interviews, held numerous focus group meetings, hosted a series of public meetings, and collected feedback through an online survey to gain input from individuals who live and work in CRCOG's 38 member communities. This comprehensive

process enabled CRCOG to identify priority projects and develop a fiscally constrained plan to move towards implementation over the 25 year planning horizon.

Figure 01.1 — **CRCOG Northeast Regional Context Map**



What is a Metropolitan Transportation Plan?

The MTP is the plan that identifies how the Capitol Region will manage and operate a multi-modal transportation system to meet the region's economic, transportation, development, and sustainability goals between now and 2045 – a long range planning timeframe in a fiscally constrained environment as required by federal law.

Key Considerations

Multiple and sometimes competing priorities

The plan recognizes that there are multiple and competing priorities to consider in the development of a fiscally constrained plan. These include both the need to maintain existing transportation assets, and the recognition that congestion, capacity issues, as well as economic and population changes will require expanding mobility options in the future.

Maintain Existing Assets

Expand Mobility Options

Declining resources

Employment and population data for the CRCOG region reveal a region that has been relatively flat in terms of population growth and economic development. The absence of steady economic growth in the Greater Hartford economy makes it more difficult to raise new revenues, and limits the scope of value capture financing methods.

Environment

This plan aims to both reduce transportation-related greenhouse gas emissions (mitigation) and to prepare transportation systems for climate events such as flooding and extreme heat (adaptation) through investments in public transportation and the implementation of strategies such as transit-oriented development (TOD), and municipal complete streets policies.

Environmental Justice

CRCOG is committed to fully integrating the principles of environmental justice into all of its transportation planning programs and activities. Feedback received during outreach to underserved populations was key to the development of this MTP update. Notices for meetings related to this MTP were translated into Spanish and Polish and translation services were available at all public meetings. CRCOG also hosted a focus group with representatives from organizations that routinely work with underserved populations to ensure that the transportation

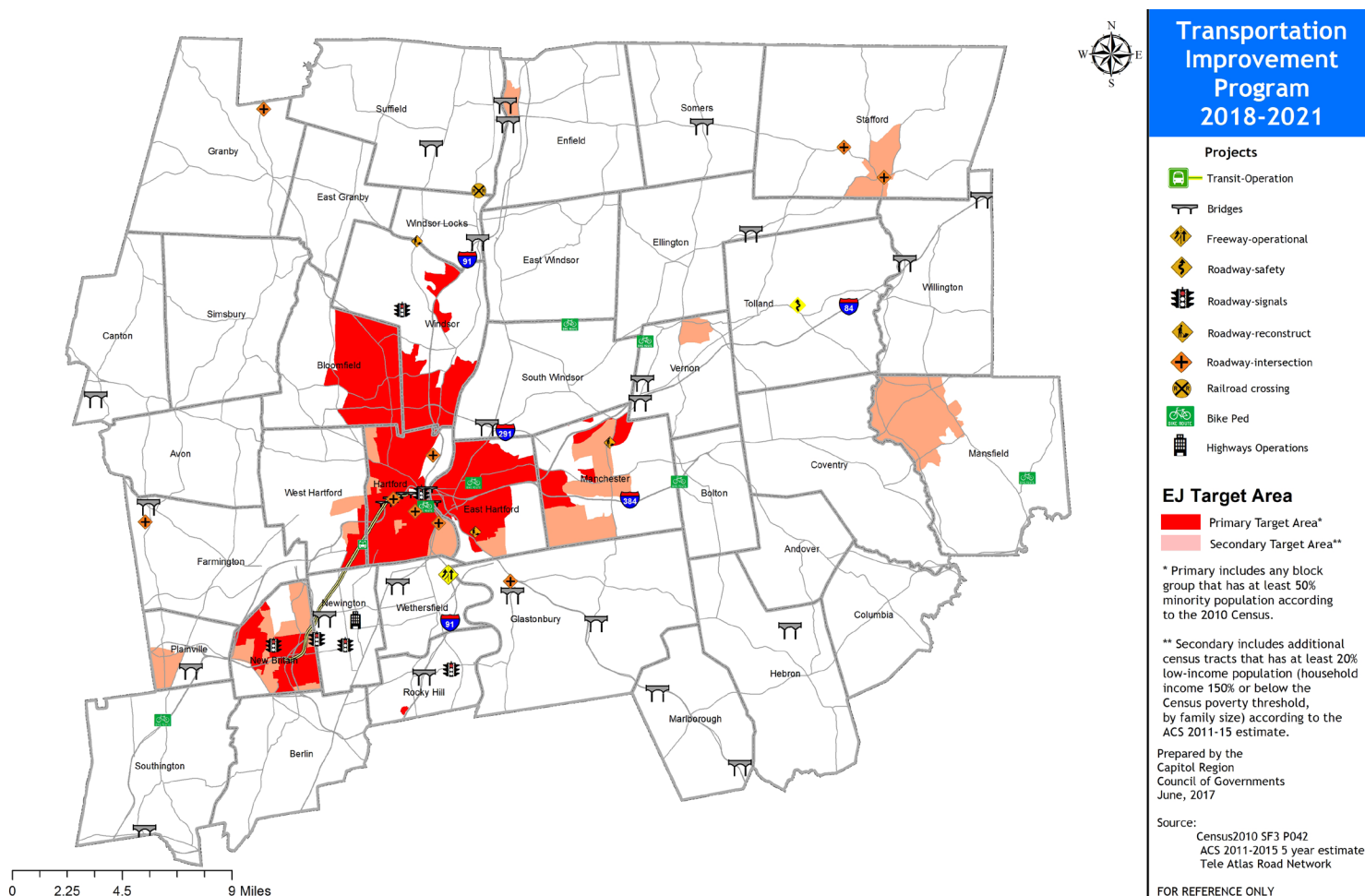
challenges these groups face were addressed in this plan. Before CRCOG moves towards implementing any of the projects identified in this plan, an equity assessment will be conducted both to ensure that the project does not cause disproportionate adverse impacts to underserved populations and that these populations receive a proportionate share of the benefits.

Demographic Trends

The projected annual population growth rate in the region is the highest in the state but is fairly static at approximately 0.2%.

The region's projection for employment growth is also rather flat with a 17% growth in the number of jobs by 2045, or growth of 0.49% per year, but it exceeds population growth. With employment increasing at a faster rate than population growth, it will put an even greater stress on the region's transportation network as the region becomes a greater net importer of employees

Figure 01.2 — Transportation Improvement Projects In Environmental Justice Areas



Primary Areas of Focus

- **Mobility and Access:** Identify key transportation investments and strategies to meet long-term (through 2045) access *and* mobility needs for the CRCOG region
- **Performance-based Planning:** Incorporate a performance-based data-driven process for selecting and implementing investments such as: safety, congestion and infrastructure quality
- **Innovative Funding:** Identify innovative funding mechanisms to help finance the region's important transportation priorities
- **Fiscally Constrained Priorities:** Develop a fiscally-constrained implementation plan for the region's priority transportation projects

Elements of Transportation System

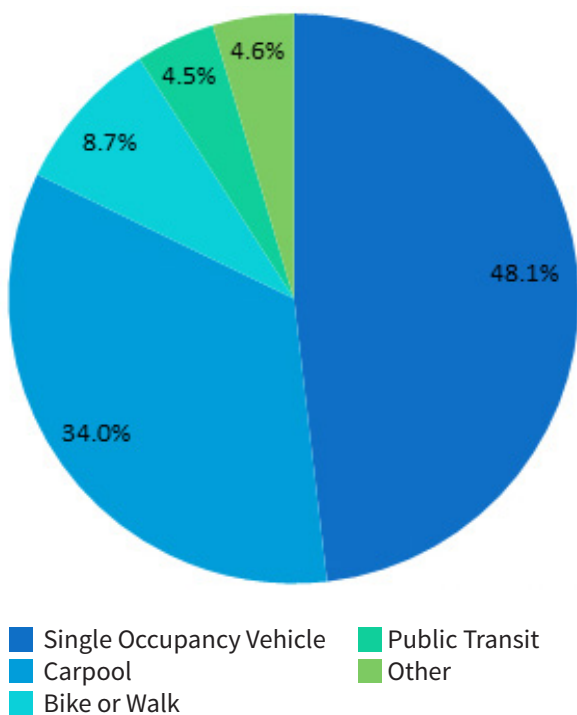
CRCOG's MTP is focused on improving the transportation system's effectiveness at getting people and goods from place to place within the CRCOG region, as well as connecting to places outside of the region. While the automobile remains the dominant transportation mode, CRCOG's commitment to environmental sustainability, and shifting preferences in travel and development patterns, necessitate a more holistic approach that improves and integrates all modes of transportation to improve mobility and access.

Transit

Despite the continued dominance of the private automobile in the CRCOG region, transportation investments have increasingly focused on transit. The region continues to improve transit services, including: local and express bus service, commuter and intercity rail service, bus rapid transit (BRT), and paratransit services provided for the elderly and persons with disabilities. The more recent addition of rideshare services provided by Transportation Network Companies (TNCs) can supplement transit to improve its reach.

There have been significant recent investments in the region's rapid transit system with the introduction of the highly successful CT**fastrak** BRT service between New Britain and Hartford, and the more recent start-up of the Hartford Line commuter rail service

Figure 01.3 — Mode Share within CRCOG Region



Source: CT Statewide Transportation Study.

between New Haven and Springfield, which included several stations within the CRCOG region. The local bus service and paratransit services provide important connections to these new and improved transit assets. CRCOG encourages developing strong transit corridors while reducing fixed-route service in some low-density residential areas where there is very low transit demand. To service these low demand areas and create first-mile/last-mile connections, subsidized flexible service options utilizing taxis, demand-response transit, and/or coordination with transportation network companies (TNCs) could be implemented. When service planning, transit agencies must decide whether to devote their limited resources to prioritizing coverage of a greater geographic area (including very low-density rural areas in some cases) or to provide more frequent service to a narrower geographic area with a higher density of potential transit riders.

Key Projects

The region's transit services need continued investment and more efficient service planning to improve the experience for existing riders and to continue to attract new customers. CRCOG believes that the implementation of the following projects will ensure that the Capitol Region remains on the path to being competitive with other transit-rich metropolitan areas in the Northeast.

- **Hartford Line Rail Stations (Enfield, Windsor Locks, Windsor, West Hartford, Newington):** Support the development of new CT*rail* Hartford Line stations in Newington, West Hartford, Windsor, Windsor Locks, and Enfield
- **Extension of CT*fastrak*:** CTDOT is exploring the expansion of bus rapid transit service east of Hartford. An initial phase of this effort was completed in 2017 with expanded

Table 01.1 – Frequency and Coverage Goals

| Frequency Goals | Coverage Goals |
|--|--|
| High ridership | Ensure that everyone has access to transit |
| Lower public subsidy | Provide lifeline services to those who don't have access to a personal vehicle |
| Reduced environmental impact through lower vehicle miles travelled | Provide access to those with severe needs. "lifeline" service |
| Promotes transit oriented development | Political equity |

hours of service for local bus service and the creation of the Route 913 express bus between Hartford, Buckland Hills, and UConn. Future potential phases would implement BRT service along Silver Lane and/or Burnside Avenue in East Hartford with limited stop service, branded vehicles, on-board Wi-Fi, enhanced shelters, real time bus arrival information, intersection and roadway treatments to speed up service, and off-board fare payment.

- **Transit Priority Corridors for Hartford/East Hartford:** CROCG recommends creating Enhanced Transit Corridors along Albany Avenue, Farmington Avenue, Franklin Avenue, Main Street, and Park Street in Hartford as well as along Burnside Avenue in East Hartford. Ideally these corridors would have high frequency service coupled with capital improvements such as transit signal priority (TSP) treatments, stop consolidation, and passenger amenities like benches and shelters.

Figure 01.4 — Infrastructure upgrades to the New Haven–Hartford–Springfield line



Source: New Haven-Hartford-Springfield Rail Program, http://www.nhhsrail.com/info_center/improvements_map.aspx.

Highway System

The vast majority of the region's people and freight travel along the roadway network which consists of a hierarchy of road types, including freeways, major non-freeway roadways (arterials), collectors, and local roadways. In 2018, the region had 5,148 miles of roadways with an annual vehicle-miles traveled (VMT) of over nine billion. Based on Connecticut Department of Labor population projections, CROCOG's travel demand model predicts that VMT will increase 13.9% in the region by 2045, or just over 0.5% annually.

CROCOG has adopted an approach that prioritizes managing existing freeway and arterial facilities to improve safety and reduce congestion. The strategies and actions for addressing issues relating to highway safety and congestion can generally be grouped into the following categories:

- Safety Management Program
- Congestion Management Process
- Traffic Incident Management
- Intelligent Transportation Systems
- Freeway Improvements
- Arterial Improvements
- Bridge Infrastructure Improvements
- Municipal Road Management
- Transportation Demand Management

Key Projects

The highways that run through Hartford, the economic engine of the Capitol Region, continue to see high levels of personal automobile and freight traffic that far exceed the volumes they were designed for. Major chokepoints on these highways significantly slow traffic, affecting economic productivity and polluting the air as vehicles idle. The projects below will mitigate congestion by adding capacity to these points. The proposal to lower the Hartford I-84 viaduct will also drastically improve the urban fabric of Hartford, connecting neighborhoods and opening up developable land. These projects have the potential to greatly improve the quality of life for Capitol region residents.

I-84 Hartford Project and I-84/I-91 Interchange

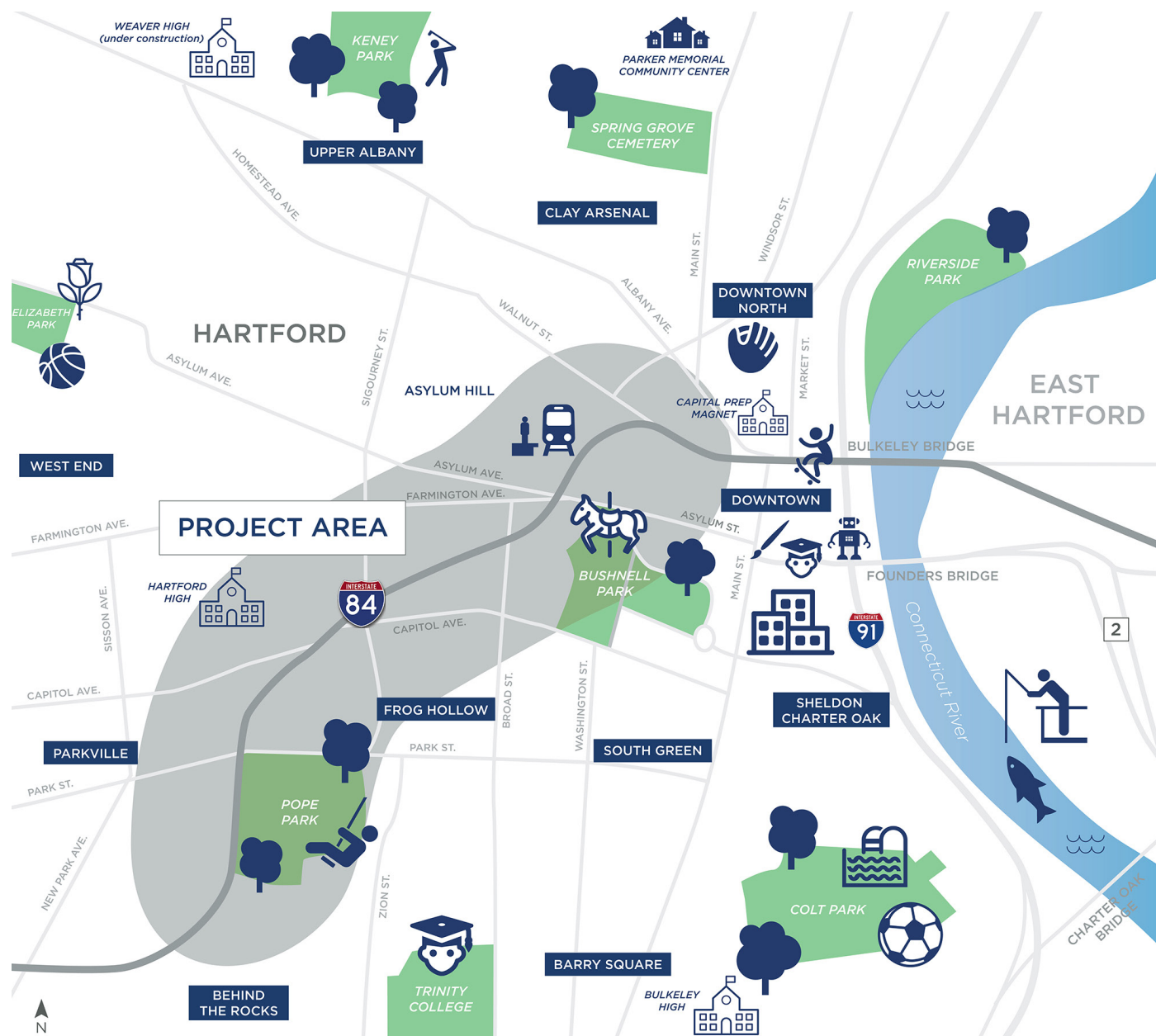
I-84 Hartford Project: The state is currently exploring how to replace the aging Viaduct that runs through the center of Hartford as its structural integrity grows increasingly unsound. Community interest in how the Viaduct structure gets rebuilt gave rise a CROCOG I-84 Viaduct Study, completed in 2010. The development of an Environmental Impact Statement (EIS) is underway by CTDOT, with a Record of Decision (ROD) anticipated for 2020.

I-84/I-91 Interchange: I-84 carries three lanes in each direction east and west of Hartford's urban core. The highway, however, is limited to two lanes in each direction at the I-91 interchange and over the Bulkeley Bridge, causing considerable congestion. In 2016, CTDOT launched the I-84 / I-91 Interchange Study.

I-91 North ramp to Charter Oak Bridge

The single-lane ramp from I-91 northbound to the Charter Oak Bridge and Route 15 eastbound experiences persistent congestion and has been routinely included in the American Transportation Research Institute's top 100 truck bottleneck routes in the country. In Spring 2019, CTDOT will begin the installation of a new two-lane ramp.

Figure 01.6 — I-84 Hartford Project Area and Surrounding Communities



Source: I-84 Hartford project website: www.i84hartford.com, CTDOT.

Non-motorized transportation

The Capitol Region, like many other regions in the country, has begun to recognize the value of active transportation and to take steps to improve pedestrian and bicycle access and safety. We are in the midst of a biking and walking resurgence which can be nurtured through strategic actions today.

CROCOG maintains a separate bicycle and pedestrian plan that is currently undergoing a significant update. The update will be broader than previous plans, following the Complete Streets approach to transportation planning. Complete Streets plans promote the integration of all modes of transportation across the entire street network, into every transportation project.

Figure 01.7 — **Demonstration project in New Britain**

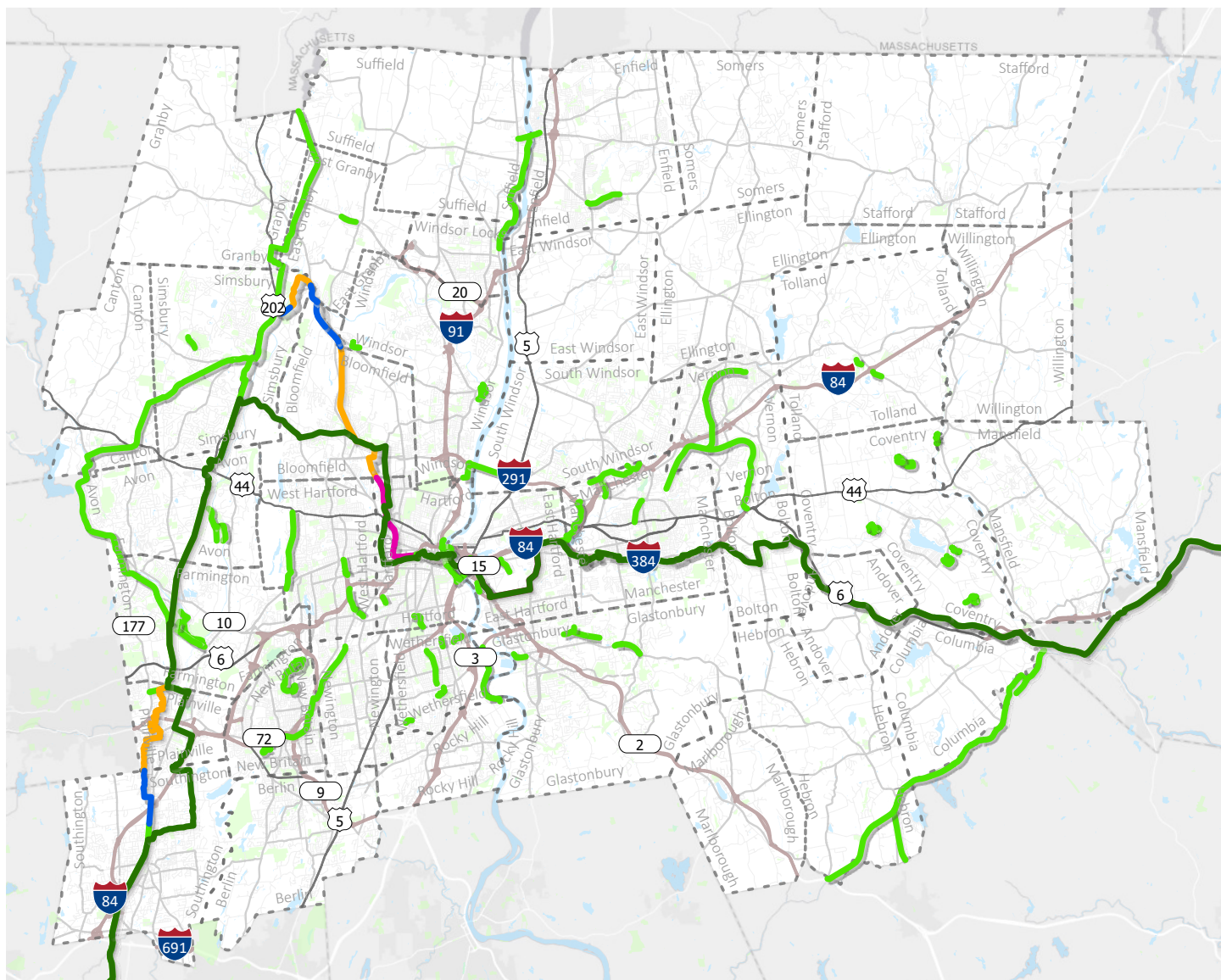


Key Projects

The Capitol Region is making major strides in improving active transportation facilities but there is still a long way to go. The implementation of the East Coast Greenway's final gaps in the region and the release of CROCOG's Complete Streets plan will strengthen the network of these facilities and set a clear path forward.

- **East Coast Greenway** (remaining gaps-Bloomfield/Hartford, Plainville, East Hartford): Closing gaps in the region's existing multi-use path system continues to be a priority. In some cases, closure of small gaps can have large payoffs by creating large, connected, comfortable bicycle access for new riders.
- **Complete Streets Plan** (currently under development): CROCOG is in the process of developing a new plan that focuses on Complete Streets. The plan includes three focus areas:
 - The Regional Complete Streets Network Map that will help focus investment
 - Complete Streets Policies that will help guide regional funding decisions
 - Implementation Guidance that will help municipalities develop better complete streets infrastructure

Figure 01.8 — Multi-use Trails



Trail Status

- Official East Coast Greenway
- Funded
- Study
- Concept
- Complete



0 4.75 9.5 19 Miles

Access to Airports

Within the CROCOG region there are 14 airports, including Bradley International Airport (Bradley), two commercial reliever airports (Robertson Field and Hartford-Brainard Airport), four public use airports, and seven restricted landing areas (RLAs). Of primary concern in this MTP is surface transportation/ground access, including passenger and freight (truck and rail) to the region's primary airport, Bradley.

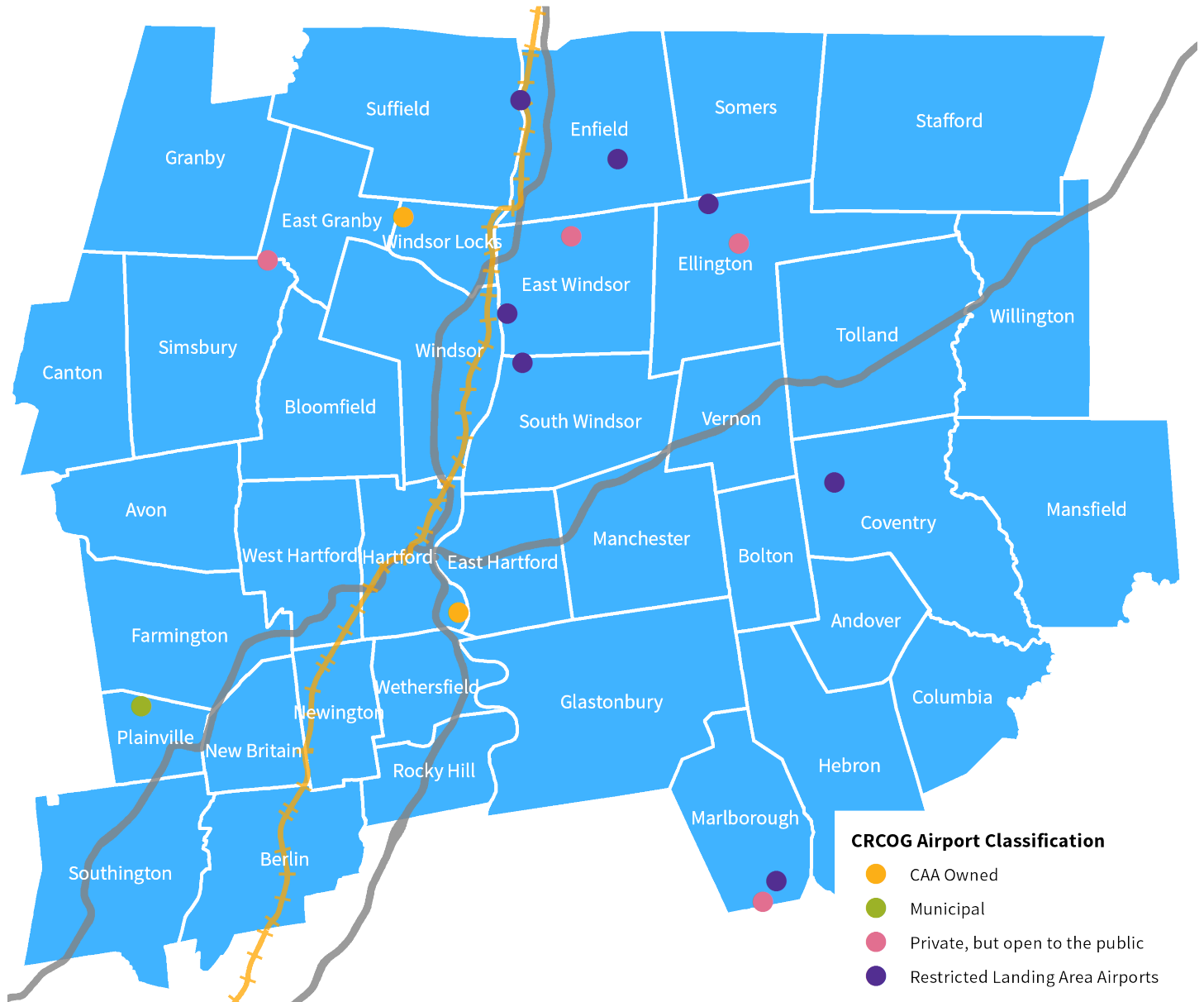
Bradley is a regional transportation hub, with the groundbreaking of a new integrated ground transportation center scheduled for 2021/2022. However, current access is limited to personal vehicles, taxis, TNCs, and the Bradley Flyer bus route (from downtown Hartford, including Hartford Union Station). With the opening of the Hartford Line commuter and intercity rail service, a passenger connection from Windsor Locks would provide a reliable link to the Airport from the three major cities in the Knowledge Corridor (Springfield, Hartford and New Haven); additionally, it would provide a link to the New Haven Line rail service.

Key Projects

With its central location and proximity to major highways and rail lines, Bradley International Airport is a regional transportation and cargo hub whose economic potential has yet to be maximized. Improved transit access, including a connection to the CT**rail** Hartford Line, would draw travelers throughout the Northeast who might currently overlook Bradley.

- **Bradley Flyer improvements:** To improve bus service to Hartford from Bradley the route should operate more frequently and be re-routed to serve the Ground Transportation Center when completed. Extending the Bradley Flyer to New Britain along CT**fastrak** and rebranding the route could attract more choice riders coming from the stations.
- **Windsor Locks Station:** Provide a transit connection to the CT**rail** Hartford Line service by instituting a direct shuttle service from the Airport to the Windsor Locks rail station, recognizing the airport's plans for an integrated ground transportation center. Shuttle schedules should align with train arrivals and departures. Shuttles could either be operated by CT**transit** or as a partnership with TNCs.
- **Continue to improve Bradley's air cargo capabilities and services.** Evaluate making Bradley a true multi-modal freight facility by improving rail freight access and developing support facilities for trucking.

Figure 01.9 — **CRCOG Regional Airports**



Freight

The tonnage of freight moving to, from, and within Hartford County is projected to increase 0.8% annually between 2014 and 2040, and the value of these goods is projected to increase 3% annually. Previous analyses have projected future increases in freight traffic, with the recent CTDOT Statewide Freight Plan projecting an increase of 57% in goods movement by 2040. About 40% of truck traffic in the region is through traffic, and inbound freight exceeds outbound freight by more than a 2:1 margin. In recent years, CRCOG has enhanced its freight planning process to include an inventory of freight-relevant infrastructure and a stakeholder outreach program.

Input from stakeholders in the region identified the following issues and deficiencies to be addressed in order to further improve freight transport in the region:

- Regional highway system has significant truck bottlenecks.
- Lack of truck parking and service facilities in the Capitol Region.
- While there could be opportunity for expanded freight rail service in the region, facilities have constraints that limit expansion.
- There is a shortage of space for trailer storage and scheduling difficulties at Bradley Airport.

Key projects

Freight facilities in the Capitol Region have not been maintained to keep up the industry. CRCOG believes the following projects are imperative to ensure the Capitol Region remains a hub in the Northeast for this growing industry.

- Reconstruction of I-91 North ramp to the Charter Oak Bridge
- I-84 Viaduct replacement
- Freight rail improvements (early planning stage)
- Reconstruct the Windsor Locks-Enfield Rail Bridge over the Connecticut River to allow for improved freight rail movement north and south along the Knowledge Corridor.
- Address constraints to expanding service. Upgrade lines to 286,000-pound capacity and address clearance limitations.

Figure 01.10 — Trucks parked at Willington Truck Stop



Photo by Carl Talley

Emerging Trends

New Technologies and Innovations

Transportation in the 21st century is undergoing a major transformation which is dominated by the following trends: vehicle electrification, connected and autonomous vehicles, micro-mobility, and shared mobility. Underlying these trends is the concept of smart cities. To ensure that these new technologies best serve the residents of the Capitol Region, CRCOG will focus on the following:

- **Identifying priority areas for CV/AV/EV infrastructure:** Identify priority locations to deploy such technologies to best meet the CRCOG region's specific needs through advance planning, pilot projects, and infrastructure investments.

Figure 01.11 — Electric Vehicle 'Juice Bar'



Photo by Carl Talley

- **Interoperability and integration:** CRCOG and the region's local governments have a role to play in fostering an interoperable and integrated transportation system that puts people's needs first.
- **Incentives/disincentives (VMT, ZOV, and Congestion):** CRCOG will assist in developing strategies to incentivize behavior that contributes to a more sustainable, efficient transportation system and dis-incentivize behavior that creates the opposite outcome. Several policy options exist for this, including congestion or cordon pricing, vehicle mile traveled pricing, or fees for zero occupancy trips and discounts for higher-occupancy shared trips.
- **Supporting infrastructure for micro-mobility:** The proliferation of micro-mobility devices provides an opportunity to rethink street design and consider what the complete street of the future may look like, and where and how they can be safely integrated to maximize travelers' choices.

Figure 01.12 — Trip planning App



Performance-based planning

CRCOG supports the Connecticut Department of Transportation's statewide performance measure targets and has developed this MTP using a performance-based approach. The breadth of competing priorities and interests are sometimes daunting. Performance measures effectively link goals and objectives to investments by providing methods to determine how these investments meet the region's and state's goals and objectives. The following performance measures have aided CRCOG in the development of this MTP and will guide future planning:

- **Safety Measures:** CRCOG uses the state's indicators when measuring safety on the region's roads. The following statistics are tracked; targets are devised using 5-year rolling averages from previous years: number of fatalities, fatality rate per 100 million VMT, number of serious injuries, serious injury rate per 100 million VMT and number of non-motorized fatalities and serious injuries.
- **Infrastructure Conditions Measures:** CRCOG also relies on statewide targets to measure the conditions of pavement and bridges in the region. Infrastructure is determined to be in either 'good' or 'poor' condition.
- **National Highway System Performance, Freight and CMAQ:** There are six indicators, largely derived from the National Performance Measurement Research Data Set created by the Federal Highway Administration that CRCOG uses to evaluate the region's highways. The performance

indicators include the percent of reliable person miles traveled (both Interstate and non-Interstate highways), truck travel times, congestion, percentage of vehicles traveling that are single-occupancy and measure of the atmospheric pollutants (VOC, NOx).

- **FTA Transit Asset Management and Transit Safety:** As CRCOG does not operate transit services, it reports on evaluations from the region's public transit agencies (the Greater Hartford Transit District, *CTrail*, *CTtransit*, and others) on the condition of their vehicles, rolling stock, infrastructure and facilities.

Figure 01.13 — Greater Hartford Transit District Bus



Photo by Carl Talley

Financial component

Prioritized Investments and Available Revenue Sources

The main sources of transportation funding in the CRCOG region are the state's Special Transportation Fund (STF), the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA). Any transportation project receiving FHWA or FTA funds must be included in the rolling four-year Transportation Improvement Program (TIP) developed and adopted by CRCOG. The TIP also includes additional details regarding these agencies' various funding programs.

The statewide capital program is primarily divided into two categories: highways (including bridges, bike, and pedestrian improvements) and transit, with recent allocations approximating 60% and 40%, respectively, with a relatively small amount dedicated to maintenance facilities. To address the growing gap between available federal funding and transportation system needs, recent expenditures have approximated two-thirds from state sources, and one-third from federal sources. This significant state share is a result of a decade long ramp-up, which contrasts with prior decades when federal funds accounted for 70-80% of CTDOT's capital program.

Figure 01.14 — CTDOT Capital Program Funding Sources State vs. Federal FY 2017–2021

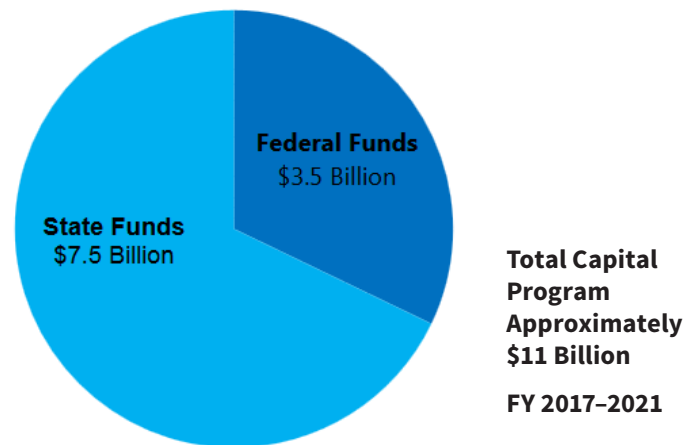
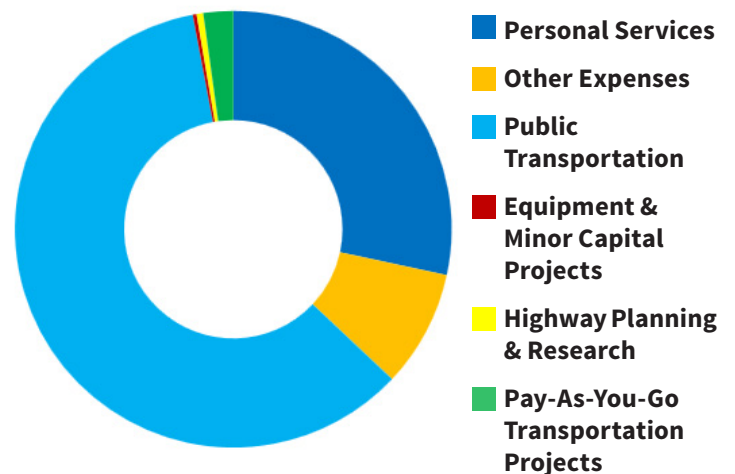


Figure 01.15 — CTDOT's Operations & Maintenance Budget FY 2018

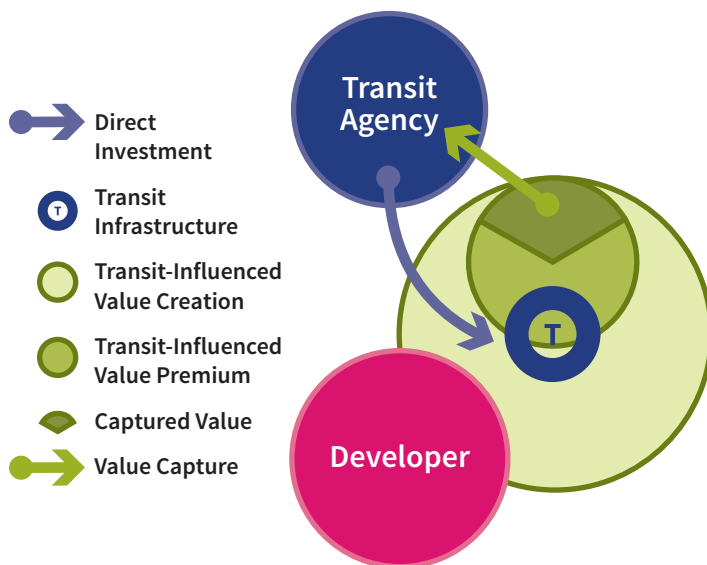


Sources: CTDOT Long-Range Transportation Plan (2017).

MTP Investment Plan

This MTP outlines a plan for major investments for surface transportation modes within the CRCOG region through 2045. In general, the plan outlines investments in three categories: highway capital projects (including improvements for bridges, bicycles, and pedestrians), transit capital projects, and operations and maintenance services.

Figure 01.16 — Transit infrastructure investment, value creation, and value capture Process



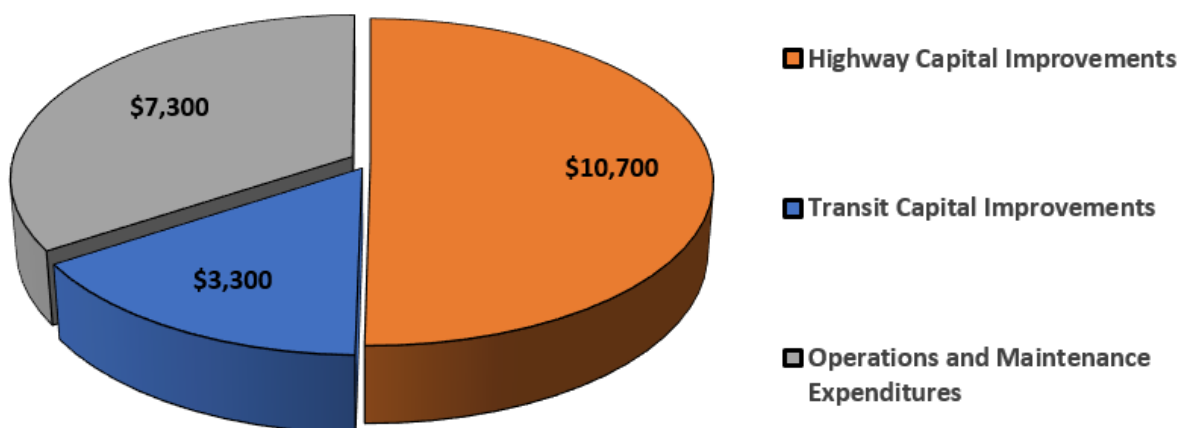
Source: Adapted from Guide to Value Capture Financing for Public Transportation Projects (2016), National Academy of Sciences.

Diversification of funding and financing

Traditional funding sources, while obviously critical, are falling short of the region's long-term needs and reinforce short-term thinking and strategies. CRCOG believes that long-term transportation planning in the Capitol Region can be bolstered by new and innovative financing strategies, of which five are identified for further exploration:

- Debt financing through the federal TIFIA and RRIF loan programs
- State legislation enabling regional transportation sales tax referenda
- Joint development at rail and bus rapid transit stations
- District value capture strategies, including tax increment financing
- Public-private partnerships to deliver specific transportation projects or components

Figure 01.17 — Expected Regional Transportation Expenditures 2019-2045 (in 000,000s)



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Key Recommendations

In addition to the fiscally constrained projects listed in this MTP, CRCOG seeks to introduce innovative approaches to project funding and implementation. New approaches to old roadblocks and bold projects which harness the industry's rapidly changing technology will accelerate efforts to improve mobility and access for people and businesses throughout the CRCOG region. As transportation needs and available resources continue to rapidly shift in the Capitol Region, CRCOG proposes partnering with municipalities and partner agencies to implement demonstration projects to quickly test new ideas and allow for refinement before implementing more broadly. CRCOG will work with local and state partners to investigate implementing the following pilot projects:



1. TOD–Complete Streets Demonstration Project for CTfastrak station – including sidewalk, bicycle and station improvements to improve neighborhood connectivity.

- Identify one station and look at a ½ to 1 mile buffer to provide sidewalk and bicycle connections to the station. In addition, the project should include more robust bicycle parking facilities such as covered parking or bike lockers.

2. New Rail Station on the Hartford Line – Innovative financing approach to engage developer in planning and financing a new rail station for a location like Enfield or West Hartford as example.

- Engage a developer using innovative financing options to construct, operate and maintain a new rail station. The idea would be to integrate a train station into a multiuse building with commercial and residential uses following model similar to Blue Back Square.

3. Transit Priority corridor improvements – single demonstration project on one of the six transit priority corridors selected as part of the Hartford Comprehensive Transit Service Plan.

- Create pilot project for extending CTfastrak service to the east as an example, highlighting branding of CTfastrak and BRT service to connect to Buckland Hills Park-n-Ride.

4. Mobility as a Service for public transportation and access to Bradley Airport to meet the CAA goal of improved “home-to-plane” services.

- To improve the traveler’s experience to and from Bradley Airport, implementation of Mobility as a Service (MaaS) could provide customers with a one-stop shopping approach to their trip, linking travel from their point of origin to the airport and even linking to final destination ground transportation. This could be launched as a pilot program in partnership between CTtransit, CAA and CROCOG.

5. TNC/Transit connection from new Bradley Airport Ground Transportation Center to rail stations on the Hartford Line – Transit/TNC partnership to provide service from rail station to airport.

- Launch a pilot program as a partnership between a TNC and CTtransit to provide public transportation service to meet trains stopping at Hartford Line stations.

CROCOG’s Role in Project Implementation

CROCOG plays a major role in selecting projects for implementation, however, implementation is typically the responsibility of the state or municipality, depending on the project. As the Capitol Region’s MPO, CROCOG is the region’s transportation planning agency, working closely with the state and municipalities to identify needs and solutions through planning studies. CROCOG also controls various federal and state funding sources, with the authority to select the projects that receive funding and approve the state’s use of federal funds.

